

Proposal

Guadalupe Estuary Inflow Standards -

[Proposed concept to maintain place for strategies while still allowing some future permitting to take place.]

Proposal for GSA BBASC Estuary Inflow Standards: A Synthesis Approach Utilizing BBEST Criteria and Stakeholder Determinations of Balance Regarding Environment / Human Needs.

Background and Introduction

At the August 3, 2011 meeting of the GSA BBASC, the group adopted, with one dissenting vote, that all new permit requirements greater than 200 acre-feet would be required to dedicate 10 percent of the diversion amount (for permits without storage), or 10 percent of firm yield (for permits with storage) to the bays and estuaries for environmental flow purposes. At the same meeting, the group recognized the need for bay and estuary inflow standards, but delayed the adoption of specific criteria until the August 16th meeting. What follows is a proposal for how such bay and estuary standards could be structured and adopted to accomplish the twin objectives of recognizing the need for some level of additional water supply development while also acknowledging the need for pursuing strategies to attempt to attain the BBEST recommendations for the estuaries.

Fundamentally, the adoption of bay and estuary inflow standards will provide several benefits: 1) avoid over-reliance on just instream flow standards; 2) help target the periods of time when the 10 percent yield / diversion dedication would benefit the bay; 3) provide a fall back criteria should the TCEQ not adopt the environmental dedication recommendations. The structure recommended herein would also provide the benefit of substantiating the need for, and the goals of, strategies designed to address environmental flow concerns.

The bay and estuary inflow criteria as proposed are designed to work *with* the environmental set aside / dedication provisions. **They are not however, an attempt to have additional water requirements for bays and estuaries.**

As the stakeholders have seen, all of the various permeations of the water supply projects meet the upper-tier BBEST recommendations such as those for A-Prime, A, and B in both the G1 spring and G2 summer seasons. However, existing water rights, when fully utilized, already violate the recommendation for the G1-D and G2-CC, D, and DD categories. One interpretation of this result would be that any new permit could not meet the BBEST recommendations and thus the permit could not be granted.

As a concession, it is proposed that the BBEST bay and estuary inflow recommendations be adopted, but modified to accommodate the stakeholder efforts to balance environmental and human needs. Generally, the proposal is to use the BBEST-recommended seasonal tiered structure and inflow volumes, but adjust the attainment frequency goals so that a water supply project might be permitted.

Concept Overview

1. First test is that a new authorization to increase the amount diverted or stored would not be allowed to make compliance with BBEST criteria worse than under TCEQ WAM Run 3 conditions as they exist today.
2. Second test is that such a new authorization must contribute toward improving the frequency of attainment from the WAM Run 3 scenario toward Region L Baseline; up to the volume of water specified in the previously agreed-upon 10% dedication of diversion/firm yield.

Specifics

The GSA BBASC would recommend that TCEQ evaluate permit applications via a modeling process as the BBEST recommended. The permit would have to meet the requirements proposed herein. A structure for seasonal criteria and inflow volumes is presented below in Tables X-1 and Y-1 for the spring (G1) and summer (G2) seasons. These volumes and tiers are equivalent to those of the BBEST. Attainment frequency goals are spelled out in Tables X-2 and Y-2, respectively. The values in the first column of attainment frequency goals (Column A) of both tables are simply those of the BBEST. These represent a set of attainment goals that the BBEST recommended to maintain a Sound Ecological Environment. As such, these provide the basis for pursuit of strategies to address identified shortcomings in the ability to meet these goals. That is the extent to which the Column A values are used.

Permitting of future additional water supply projects would utilize the attainment frequency goals of Columns B and C in Tables X-2 and Y-2. These represent the specific elements of the reduced attainment frequency information presented to the stakeholders by BBEST member Dr. Norman Johns in his “time series” inflow analyses of various scenarios. For instance, in Table X-1 for the G1 season, the G1-D attainment recommendation from the BBEST was that inflows this low occur no more than 9% of years (as in Column A). However, as we have seen, this goal is not possible under either the Region L Baseline or the WAM Run 3 baseline, much less with the water supply projects we have examined. Under Region L Baseline this inflow level appeared in 29% of years in the 1941-89 period, as in Column B. Under TCEQ Runs 3 conditions, this level occurred in 31% of years as in Column C.

Columns B and C would both come into play to govern permitting at TCEQ in the following manner. The values in Column C would have to be met when TCEQ evaluates

a new water right with their standard Run 3 permit WAM with full use of existing water rights and no wastewater flows. Thus, the value for G1-D criteria of 31%, as presented to the BBASC by Dr. Johns, fills this position in Column C. This attainment frequency is met by the projects the stakeholders have evaluated. All other G1 seasonal BBEST criteria were achieved under the Region L Baseline and the with-project scenarios and Run 3 so none of these other entries in Columns B or C differ from the BBEST criteria. The specific values in Table Y-2 are derived similarly. In both tables, attainment frequency goals that differ from the BBEST level are highlighted.

While Column C would have to be met in the TCEQ WAM analysis, the difference in Columns B and C would come into play in the following manner:

- 1) For a permit to be issued using this structure for the standards, the permit applicant would be required to undertake limited measures to improve upon the attainment frequencies resulting for Run 3 until achieving those of the Region L Baseline. For example, the G1-D attainment frequencies would be required to improve from 30.6 percent to 28.6 percent, and the G2-DD criteria would be required to improve from 18.4 percent to 16.3 percent.
- 2) The amount of water required to improve these conditions, either as a portion of firm yield or as a portion of total annual diversion, could not be greater than the 10 percent environmental set aside/dedication already required.
- 3) The bay and estuary inflow criteria apply only to projects seeking to divert an amount greater or equal to 1,000 ac-ft/year or store an amount greater or equal to 10,000 acre-feet.

Table X-1. Summary of Guadalupe Estuary recommended inflow volumes for the Feb. -May period.

Criteria level	Inflow Volumes ¹ (1000 ac-ft)	
	Feb.	Mar.- May
G1- Aprime,	n/a	550-925
G1-A	n/a	375-550
G1-B	n/a	275-375
G1-C	≥75	150-275
G1-CC	0 - 75	150-275
G1-D	n/a	0 - 150

Notes: 1) volume is the monthly amount for February as applicable or the total three-month amount for the March-May period.

Table X-2. Summary of Guadalupe Estuary attainment goals for the recommended inflow volumes for the Feb. -May period.

Criteria level	Frequency of Attainment Requirements ¹		
	A) Strategies Target [BBEST Recommendations]	B) New Permits, Environmental Flow Target [Reg L Baseline]	C) New Permits Permitting Requirement [TCEQ Run3]
G1-Aprime	at least 12% of years	at least 12% of years	at least 12% of years
G1-A	at least 12 % of years	at least 12 % of years	at least 12 % of years
G1-A & G1-B combined	at least 17% of years	at least 17% of years	at least 17% of years
G1-C & G1-CC combined	G1-CC no more than 2/3 of total	G1-CC no more than 2/3 of total	G1-CC no more than 2/3 of total
G1-D	no more than 9% of years	no more than 29% of years	no more than 31% of years

Notes:

1) The frequency of attainment percentages refers to the number of years that the inflow volume was met or exceeded in a model simulation covering the 1941-1989 period as within the Guadalupe - San Antonio basin Water Availability Model.

Table Y-1. Summary of Guadalupe Estuary recommended inflow volumes for the June-Sept. period.

Criteria level	Inflow Volumes ¹ (1000 ac-ft)	
	June	July-Sept.
G2-Aprime	n/a	450-800
G2-A	n/a	275-450
G2-B	n/a	170-275
G2-C	≥40	75-170
G2-CC	0 - 40	75-170
G2-D	n/a	50-75
G2-DD	n/a	0-50

Notes: 1) volume is the monthly amount for June as applicable or the total three-month amount for the July-September period.

Table Y-2. Summary of Guadalupe Estuary attainment goals for the recommended inflow volumes for the June-Sept. period.

Criteria level	Frequency of Attainment Requirements ¹		
	A) Strategies Target [BBEST Recommendations]	B) New Permits, Environmental Flow Target [Reg L Baseline]	C) New Permits Permitting Requirement [TCEQ Run3]
G2-Aprime	at least 12% of years	at least 12% of years	at least 12% of years
G2-A	at least 17 % of years	at least 17 % of years	at least 17 % of years
G2-A & G2-B	at least 30% of years	at least 30% of years	at least 30% of years
G2-C & G2-CC combined	G2-CC no more than 17% of total	G2-CC no more than 30% of total	G2-CC no more than 40% of total
G2-DD	no more than 6% of years	no more than 16% of years	no more than 18% of years
G2-D & G 2-DD combined	no more than 9% of years	no more than 22% of years	no more than 25% of years

Notes:

1) The frequency of attainment percentages refers to the number of years that the inflow volume was met or exceeded in a model simulation covering the 1941-1989 period as within the Guadalupe - San Antonio basin Water Availability Model.

Table Z-1. Summary of Mission-Aransas Estuary recommended inflow volumes for the June-Sept. period.

Criteria level	Inflow Volumes ¹ (1000 ac-ft)	
	June	July-Sept.
MA2-Aprime	n/a	500-1000

Notes: 1) volume is the monthly amount for June as applicable or the total three-month amount for the July-September period.

Table Z-2. Summary of Mission-Aransas Estuary attainment goals for the recommended inflow volumes for the June-Sept. period.

Criteria level	Specification	Frequency of Attainment Requirements ¹	
		Inflow Target Standard	Environmental Flow Permitting Baseline
MA2-Aprime	Attainment MA2-Aprime	at least 2% of years	at least 2% of years